

Name: _____ Date: _____ Period: _____

Absolute Value Equations with Inequalities

$$|x - 5| \leq 2$$

Solving Two Separate Equations

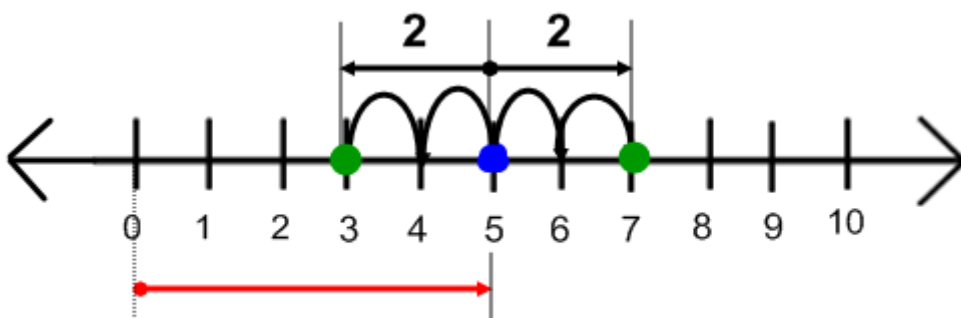
$$\begin{array}{rcl} -2 \leq x - 5 \leq 2 \\ x - 5 \geq -2 & & x - 5 \leq +2 \\ \underline{+5} \quad \underline{+5} & & \underline{+5} \quad \underline{+5} \\ x \geq 3 & & x \leq 7 \end{array}$$

Value of the Expression Method

$$\begin{array}{l} |x - 5| \leq 2 \\ \begin{array}{l} | +2 | \\ | -2 | \end{array} \end{array} \quad \begin{array}{l} x \leq 7 \\ x \geq 3 \end{array} \quad \text{Switch Symbol}$$

What values of x will make the expression equal to positive 2 at the top and negative at the bottom?

Number Line Method



$$\begin{array}{l} |x - b| \leq C \\ |x - 5| \leq 2 \end{array}$$

Shift 5 from zero

$$|x - 5| \geq 2$$

1. Plot the first point located at +5.
2. Count a distance 2 to the left and right.
3. Plot those points and write the solution, $x \geq 3$ and $x \leq 7$ (Make sure you switch the symbol for \geq)